

**BELKIN.**

# **Powerline AV+ Networking Adapter**

## **User Manual**

PM01611 F5D4075



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# INTRODUCTION

Thank you for purchasing the Powerline AV+ Networking Adapter (the Adapter). Most people don't enjoy buying long and expensive Ethernet cables or pulling the cables from one place to another, but the Adapter offers one of the easiest ways to enjoy home or small-business networking. Users can now experience a total network solution with the Adapter. The Powerline AV+ Networking Adapter operates on the HomePlug® Powerline Specification 2.0 standard, providing up to 200Mbps\* bandwidth over home AC wiring. Since the home power lines are the most pervasive medium in households with multiple outlets in every room, the Adapter allows multiple home desktop and notebook computers to be networked to share an Internet connection, printers, and files, stream video, and play games without any additional wiring. The advanced signal processing is capable of maintaining coverage throughout the entire house, even across different phase rings.

The installation of the Adapter only requires that a 10/100Mbps Ethernet port is available on your device. This makes the Powerline AV+ Networking Adapter compatible with any device, including Mac®, Windows®, and UNIX machines. Note that you need at least two adapters to create a powerline network.

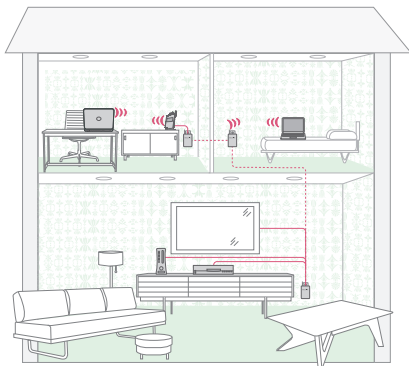
For security, all HomePlug devices are equipped with 128-bit AES encryption. The private home power grid plus encryption makes HomePlug significantly more secure than competing technologies.

The Powerline AV+ Networking Adapter provides the best solution for no-new-wires home networking. With easy plug-and-play installation, and the reliability of HomePlug Ethernet's products, the Powerline AV+ Networking Adapter is the best solution for high-speed networking.

# INTRODUCTION

## Features

- Up to 200Mbps\* bandwidth over standard home power lines
- HomePlug signal easily passes through circuit breaker
- 128-bit DES encryption ensures data security
- Encryption completed by hardware, without sacrifice to bandwidth
- Includes 3 IEEE 802.3 computer interface ports
- Plug-and-play installation
- HomePlug Powerline Specification 2.0-compliant
- Coexistence with HomePlug 1.0 and 1.0 Turbo networks



## Product Specifications

Computer Interface: IEEE 802.3/802.3u

Operating Temperature: 32–104 degrees F (0–40 degrees C)

Storage Temperature: -4–176 degrees F (-20–80 degrees C)

Humidity: Max. 5%–90% (non-condensing)

*\*The standard transmission rate—200Mbps—is the physical data rate. Actual data throughput will be lower.*



# INTRODUCTION

## Security LED

Blinking Blue  
Solid Blue  
Double Flash

Encryption setting up  
Encryption setup successful  
Fail in encryption

## Powerline Link LED

Blinking  
Color Blue  
Color Magenta  
Color Amber  
Off

Powerline data transmitting or receiving  
Link rate excellent: greater than 60Mbps  
Link rate normal: 30–60Mbps  
Link rate low: 0–30Mbps  
No activity

## Ethernet Link LEDs

Solid Blue  
Off

10/100Mbps port linked  
No Ethernet link

## System Requirements

- At least 2 HomePlug devices
- Available Ethernet port on each computer or network device
- Available power outlet
- Standard home powerline wiring
- CD-ROM drive

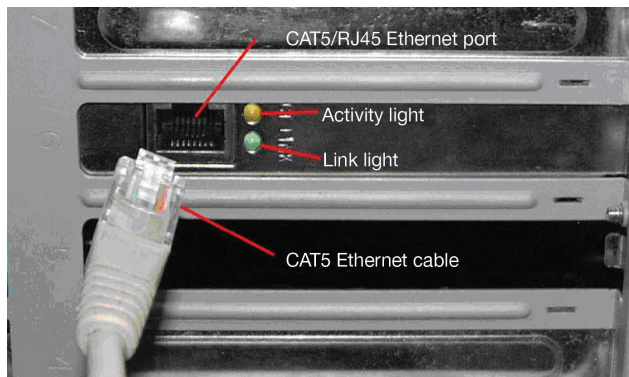
## Package Contents

- One Powerline AV+ Networking Adapter
- One Powerline AV Networking Adapter
- HomePlug Quick Installation Guide
- HomePlug User Manual (on CD)
- CD-ROM
- Limited Warranty Card
- Two Power Cables
- Two CAT5/RJ45 Ethernet Cables
- Two Wall Plug Adapters

# INSTALLING AND SETTING UP THE ADAPTERS

## Overview

Installation of the Powerline AV+ Networking Adapter takes only seconds and does not require setting up long wires throughout the house. Simply plug the units directly into any available wall outlet and connect to any device with an Ethernet port. Users have the option to randomly change the security password for their powerline network.



## Hardware Setup

1. Plug your network cable into the device's RJ45 network adapter port.
2. Plug the other end of your network cable into the RJ45 port located at the back of the Adapter.
3. Plug the power cable or wall adapter into the power connector at the back of the Adapter.

4. Insert the power plug of your power cable or wall adapter directly into a power outlet in the wall.

**Note: Do not plug the device into a UPS or power strip with surge protection as they may filter the powerline signal.**

5. Repeat this process for the second Adapter.

# CONFIGURATION

## Overview

The Adapter uses 128-bit AES encryption to block access from the outside. By default, the protection is enabled. However, it is recommended that you change the default network password with the “Encryption” button located on the units.



## Changing the Network Password

1. With both Adapters plugged into the wall, press the “Encryption” button on the first unit for 10 seconds. The password on this Adapter has now been changed to a random value.
2. Next, press the “Encryption” button on this unit for more than 0.5 seconds, but less than three seconds.
3. Within two minutes, press the “Encryption” button on the second unit for more than 0.5 seconds, but less than three seconds.
4. The new network password has now been saved to the second unit. The password will not be lost, even if the Adapters are unplugged from the wall.

### Adding Another Adapter to the Network

1. If the default network password has been changed, a new Adapter will have to load the new password before it can join the network.
2. Press the “Encryption” button on an encrypted unit for more than 0.5 seconds, but less than three seconds.
3. Within two minutes, press the “Encryption” button on the new unit for more than 0.5 seconds, but less than three seconds.
4. The new device has now been loaded with the network password and added to the current powerline network.

### Resetting to Factory Defaults

Using a pointed object, press and hold the “Reset” button for one second to restore defaults. This procedure resets the network password to the default out-of-box value.

### Technical Support

You can find technical support information at [www.belkin.com/support](http://www.belkin.com/support) or [www.belkin.com](http://www.belkin.com).



## FCC Statement

### DECLARATION OF CONFORMITY WITH FCC RULES FOR ELECTROMAGNETIC COMPATIBILITY

We, Belkin International, Inc., of 501 West Walnut Street, Compton, CA 90220, declare under our sole responsibility that the products, F5D4074-S, to which this declaration relates, comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution: Exposure to Radio Frequency Radiation. The radiated output power of this device is far below the FCC radio frequency exposure limits. Nevertheless, the device shall be used in such a manner that the potential for human contact during normal operation is minimized. When connecting an external antenna to the device, the antenna shall be placed in such a manner to minimize the potential for human contact during normal operation. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation.

### Federal Communications Commission Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy. If this equipment does cause harmful interference to radio or television

reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## Modifications

The FCC requires the user to be notified that any changes or modifications to this device that are not expressly approved by Belkin International, Inc., may void the user's authority to operate the equipment.

## Europe – EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

- EN60950-1:2001 A11:2004

Safety of Information Technology Equipment



## Belkin International, Inc., Limited 1-Year Product Warranty

### What this warranty covers.

Belkin International, Inc. ("Belkin") warrants to the original purchaser of this Belkin product that the product shall be free of defects in design, assembly, material, or workmanship.

### What the period of coverage is.

Belkin warrants the Belkin product for one year.

### What will we do to correct problems?

#### *Product Warranty.*

Belkin will repair or replace, at its option, any defective product free of charge (except for shipping charges for the product). Belkin reserves the right to discontinue any of its products without notice, and disclaims any limited warranty to repair or replace any such discontinued products. In the event that Belkin is unable to repair or replace the product (for example, because it has been discontinued), Belkin will offer either a refund or a credit toward the purchase of another product from Belkin.com in an amount equal to the purchase price of the product as evidenced on the original purchase receipt as discounted by its natural use.

### What is not covered by this warranty?

All above warranties are null and void if the Belkin product is not provided to Belkin for inspection upon Belkin's request at the sole expense of the purchaser, or if Belkin determines that the Belkin product has been improperly installed, altered in any way, or tampered with. The Belkin Product Warranty does not protect against acts of God such as flood, earthquake, lightning, war, vandalism, theft, normal-use wear and tear, erosion, depletion, obsolescence, abuse, damage due to low voltage disturbances (i.e. brownouts or sags), non-authorized program, or system equipment modification or alteration.

### How to get service.

To get service for your Belkin product you must take the following steps:

1. Contact Belkin International, Inc., at 501 W. Walnut St., Compton CA 90220, Attn: Customer Service, or call (800)-223-5546, within 15 days of the Occurrence. Be prepared to provide the following information:
  - a. The part number of the Belkin product.
  - b. Where you purchased the product.
  - c. When you purchased the product.
  - d. Copy of original receipt.

2. Your Belkin Customer Service Representative will then instruct you on how to forward your receipt and Belkin product and how to proceed with your claim.

Belkin reserves the right to review the damaged Belkin product. All costs of shipping the Belkin product to Belkin for inspection shall be borne solely by the purchaser. If Belkin determines, in its sole discretion, that it is impractical to ship the damaged equipment to Belkin, Belkin may designate, in its sole discretion, an equipment repair facility to inspect and estimate the cost to repair such equipment. The cost, if any, of shipping the equipment to and from such repair facility and of such estimate shall be borne solely by the purchaser. Damaged equipment must remain available for inspection until the claim is finalized. Whenever claims are settled, Belkin reserves the right to be subrogated under any existing insurance policies the purchaser may have.

**How state law relates to the warranty.**

THIS WARRANTY CONTAINS THE SOLE WARRANTY OF BELKIN. THERE ARE NO OTHER WARRANTIES, EXPRESSED OR, EXCEPT AS REQUIRED BY LAW, IMPLIED, INCLUDING THE IMPLIED WARRANTY OR CONDITION OF QUALITY, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND SUCH IMPLIED WARRANTIES, IF ANY, ARE LIMITED IN DURATION TO THE TERM OF THIS WARRANTY.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

IN NO EVENT SHALL BELKIN BE LIABLE FOR INCIDENTAL, SPECIAL, DIRECT, INDIRECT, CONSEQUENTIAL OR MULTIPLE DAMAGES SUCH AS, BUT NOT LIMITED TO, LOST BUSINESS OR PROFITS ARISING OUT OF THE SALE OR USE OF ANY BELKIN PRODUCT, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

This warranty gives you specific legal rights, and you may also have other rights, which may vary from state to state. Some states do not allow the exclusion or limitation of incidental, consequential, or other damages, so the above limitations may not apply to you.

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